Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To:	Luda Voskov, Project Manager; Environmental Cleanup II Section, Remediation Division	**Date:**	September 27, 2006
From:	Larry Champagne; Technical Support Section, Remediation Division		
Subject:	Gulfco Marine Maintenance NPL Superfund Site Review of Intracoastal Waterway Sediment and Surface Water Data		

I have completed my review of this data and have the following comments.

Fish Tissue Investigation:

1. It should be verified that the sediment screening values in Tables 1 and 3 and the list of bioaccumulative compounds in Table 4 match those from the latest ERA guidance update (TCEQ, 2006).

2. In the transmittal letter, reference is made to both TRRP-24 (TCEQ, 2002) and the Combustion Guidance (EPA, 2005) in the development of sediment concentrations that are protective of the fish ingestion pathway. However, there is concern over the f_{oc} and fish lipid content values used in the equation in Attachment B.

   Regarding the f_{oc}, TRRP-24 suggests a default value of 0.01, not the 0.04 value from the EPA Combustion Guidance. Furthermore, in a July 30, 1997 letter from TNRCC (TCEQ's predecessor agency) to EPA, it is stated that the 0.04 value (appearing in the 1997 draft version of the human health combustion guidance) is not appropriate for screening-level risk assessments and suggests that, in the absence of site-specific data, the following f_{oc} values are more appropriate:

Streams -	0.005
Estuaries -	0.0062
Tidally-influenced Streams	0.008
Reservoirs -	0.017

   These values are based on data collected from more than 300 samples over a broad geographic area within Texas representing a variety of sediment types and environmental conditions. Finally, in its survey of national sediment quality, EPA

(2004) states that if site-specific measurements of total organic carbon were not available, f_{oc} was assumed to be 0.01.

All of these references indicate that the f_{oc} value should be lower than the 0.04 used. I recommend that a value of 0.01 be used as a default unless site-specific data are collected. This will have the effect of lowering the current sediment PCLs.

Regarding the fish lipid content, a value of 7% was used in the calculations, but EPA (2004) states that the mean fillet percent lipid content for various groups of fish species in the STORET database ranged from 0.753 to 4.49%. EPA (2004) also states that the mean fillet percent lipid content in the *National Study of Chemical Residues in Fish* ranged from 1.6 to 4.9%. As a result, EPA (2004) selected a 3% lipid content in fish fillets for assessing human health effects from the consumption of contaminated fish and states that the current national methodology uses a 3% value for human health assessments. Therefore, I recommend that a value of 3% be used as a default, which will have the effect of raising the current sediment PCLs.

When both the recommended f_{oc} and fish lipid content default values are used, the net effect will be to lower the current sediment PCLs by approximately 58%. After utilizing these recommended default values, the sediment PCLs should be recalculated and compared to site sediment concentrations to see if there are any exceedances.

References:

EPA. 2004. The Incidence and Severity of Sediment Contamination In Surface Waters Of The United States. National Sediment Quality Survey, Second Edition. EPA 823-R-04-007. November.

EPA. 2005. Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Solid Waste and Emergency Response. EPA-520-R-05-006. September.

TCEQ. 2002. Determining PCLs for Surface Water and Sediment. Remediation Division. RG-366/TRRP-24 (Revised). December.

TCEQ. 2006. Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas RG-263 (Revised). January.

TNRCC. 1997. Letter from Lucy Fraiser (Toxicology & Risk Assessment Section) to David Weeks (EPA, Region 6). July 30.